

# RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/086,177C  
Source: IFW/b  
Date Processed by STIC: 10/19/06

# *ENTERED*



IFW16

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/086,177C

DATE: 10/19/2006  
TIME: 08:31:36

Input Set : A:\80421-1.APP  
Output Set: N:\CRF4\10192006\J086177C.raw

see 6'7  
pp

3 <110> APPLICANT: Tudan, Christopher R.  
 4 Merzouk, Ahmed  
 5 Arab, Lakhdar  
 6 Saxena, Geeta  
 7 Eaves, Connie J.  
 8 Cashman, Johanne  
 9 Clark-Lewis, Ian  
 10 Salari, Hassan  
 11 University of British Columbia  
 12 Chemokine Therapeutics Corporation  
 14 <120> TITLE OF INVENTION: CXC Chemokine Receptor 4 Agonist Peptides  
 16 <130> FILE REFERENCE: 080421-000100US  
 18 <140> CURRENT APPLICATION NUMBER: US 10/086,177C  
 19 <141> CURRENT FILING DATE: 2002-02-26  
 21 <150> PRIOR APPLICATION NUMBER: CA 2,305,036  
 22 <151> PRIOR FILING DATE: 2000-04-12  
 24 <150> PRIOR APPLICATION NUMBER: US 60/232,425  
 25 <151> PRIOR FILING DATE: 2000-09-14  
 27 <150> PRIOR APPLICATION NUMBER: CA 2,335,109  
 28 <151> PRIOR FILING DATE: 2001-02-23  
 30 <150> PRIOR APPLICATION NUMBER: US 09/835,107  
 31 <151> PRIOR FILING DATE: 2001-04-12  
 33 <160> NUMBER OF SEQ ID NOS: 214  
 35 <170> SOFTWARE: PatentIn version 3.3  
 37 <210> SEQ ID NO: 1  
 38 <211> LENGTH: 67  
 39 <212> TYPE: PRT  
 40 <213> ORGANISM: Homo sapiens  
 42 <220> FEATURE:  
 43 <223> OTHER INFORMATION: human SDF-1alpha  
 45 <400> SEQUENCE: 1  
 46 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser  
 47 1 . . . . . 5 . . . . . 10 . . . . . 15  
 48 His Val Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn Thr Pro  
 49 . . . . . 20 . . . . . 25 . . . . . 30  
 50 Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn Arg Gln  
 51 . . . . . 35 . . . . . 40 . . . . . 45  
 52 Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys  
 53 . . . . . 50 . . . . . 55 . . . . . 60  
 54 Ala Leu Asn  
 55 65  
 57 <210> SEQ ID NO: 2  
 58 <211> LENGTH: 93

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59 <212> TYPE: PRT  
60 <213> ORGANISM: Homo sapiens  
62 <220> FEATURE:  
63 <223> OTHER INFORMATION: human SDF-1 precursor, PBSF  
65 <400> SEQUENCE: 2  
66 Met Asn Ala Lys Val Val Val Leu Val Leu Val Leu Thr Ala Leu  
67 1 5 10 15  
68 Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys  
69 20 25 30  
70 Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys  
71 35 40 45  
72 Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys  
73 50 55 60  
74 Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln  
75 65 70 75 80  
76 Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met  
77 85 90  
79 <210> SEQ ID NO: 3  
80 <211> LENGTH: 93  
81 <212> TYPE: PRT  
82 <213> ORGANISM: Homo sapiens  
84 <220> FEATURE:  
85 <223> OTHER INFORMATION: human SDF-1beta  
87 <400> SEQUENCE: 3  
88 Met Asn Ala Lys Val Val Val Val Leu Val Leu Val Leu Thr Ala Leu  
89 1 5 10 15  
90 Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys  
91 20 25 30  
92 Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys  
93 35 40 45  
94 Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys  
95 50 55 60  
96 Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln  
97 65 70 75 80  
98 Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met  
99 85 90  
101 <210> SEQ ID NO: 4  
102 <211> LENGTH: 17  
103 <212> TYPE: PRT  
104 <213> ORGANISM: Artificial Sequence  
106 <220> FEATURE:  
107 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-17), CTCE9902  
109 <400> SEQUENCE: 4  
110 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser  
111 1 5 10 15  
112 His  
115 <210> SEQ ID NO: 5  
116 <211> LENGTH: 6  
117 <212> TYPE: PRT

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118 <213> ORGANISM: Artificial Sequence  
120 <220> FEATURE:  
121 <223> OTHER INFORMATION: CXCR4 agonist sequence motif within 20 amino acids  
122 of the N-terminus  
124 <400> SEQUENCE: 5  
125 Arg Phe Phe Glu Ser His  
126 1 5  
128 <210> SEQ ID NO: 6  
129 <211> LENGTH: 9  
130 <212> TYPE: PRT  
131 <213> ORGANISM: Artificial Sequence  
133 <220> FEATURE:  
134 <223> OTHER INFORMATION: synthetic SDF-1 peptide analogue CXCR4 agonist  
136 <400> SEQUENCE: 6  
137 Lys Pro Val Ser Leu Ser Tyr Arg Cys  
138 1 5  
140 <210> SEQ ID NO: 7  
141 <211> LENGTH: 9  
142 <212> TYPE: PRT  
143 <213> ORGANISM: Artificial Sequence  
145 <220> FEATURE:  
146 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-9)-2-C9/C9-cysteine dimer,  
147 CTCE9901  
149 <220> FEATURE:  
150 <221> NAME/KEY: MISC\_FEATURE  
151 <222> LOCATION: (7)..(7)  
152 <223> OTHER INFORMATION: dimerised by formation of a disulfide bond between two Cys  
153 residues in position 7 of two SEQ ID NO:7 peptides  
155 <400> SEQUENCE: 7  
156 Lys Pro Val Ser Leu Ser Tyr Arg Cys  
157 1 5  
159 <210> SEQ ID NO: 8  
160 <211> LENGTH: 10  
161 <212> TYPE: PRT  
162 <213> ORGANISM: Artificial Sequence  
164 <220> FEATURE:  
165 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist SDF-1(1-9)-2  
166 (Compound #3)  
168 <220> FEATURE:  
169 <221> NAME/KEY: MOD\_RES  
170 <222> LOCATION: (10)..(10)  
171 <223> OTHER INFORMATION: Xaa = Lys whose epsilon amino group forms a covalent amide  
172 bond with the alpha amino group of Cys at position 9 of  
173 KPVSLSYRC (SEQ ID NO:9), thereby forming a dimer  
175 <400> SEQUENCE: 8  
W--> 176 Lys Pro Val Ser Leu Ser Tyr Arg Cys Xaa  
177 1 5 10  
179 <210> SEQ ID NO: 9  
180 <211> LENGTH: 9

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181 <212> TYPE: PRT  
182 <213> ORGANISM: Artificial Sequence  
184 <220> FEATURE:  
185 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist SDF-1(1-9)-2  
186 (Compound #3)  
188 <220> FEATURE:  
189 <221> NAME/KEY: MOD\_RES  
190 <222> LOCATION: (9)..(9)  
191 <223> OTHER INFORMATION: Xaa = Cys whose alpha amino group forms a covalent amide  
192 bond with the epsilon amino group of Lys at position 10  
193 of KPVSLSYRCX (SEQ ID NO:8), thereby forming a dimer  
195 <400> SEQUENCE: 9,  
W--> 196 Lys Pro Val Ser Leu Ser Tyr Arg Xaa  
197 1 5  
199 <210> SEQ ID NO: 10  
200 <211> LENGTH: 9  
201 <212> TYPE: PRT  
202 <213> ORGANISM: Artificial Sequence  
204 <220> FEATURE:  
205 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist dimer of SDF-1 amino  
206 acids 1-8  
208 <220> FEATURE:  
209 <221> NAME/KEY: MOD\_RES  
210 <222> LOCATION: (9)..(9)  
211 <223> OTHER INFORMATION: Xaa = Lys whose epsilon amino group forms a covalent amide  
212 bond with the alpha amino group of Arg at position 8 of  
213 KPVSLSYX (SEQ ID NO:11), thereby forming a dimer  
215 <400> SEQUENCE: 10  
W--> 216 Lys Pro Val Ser Leu Ser Tyr Arg Xaa  
217 1 5  
219 <210> SEQ ID NO: 11  
220 <211> LENGTH: 8  
221 <212> TYPE: PRT  
222 <213> ORGANISM: Artificial Sequence  
224 <220> FEATURE:  
225 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist dimer of SDF-1 amino  
226 acids 1-8  
228 <220> FEATURE:  
229 <221> NAME/KEY: MOD\_RES  
230 <222> LOCATION: (8)..(8)  
231 <223> OTHER INFORMATION: Xaa = Arg whose alpha amino group forms a covalent amide  
232 bond with the epsilon amino group of Lys at position 9  
233 of KPVSLSYRX (SEQ ID NO:10), thereby forming a dimer  
235 <400> SEQUENCE: 11  
W--> 236 Lys Pro Val Ser Leu Ser Tyr Xaa  
237 1 5  
239 <210> SEQ ID NO: 12  
240 <211> LENGTH: 30  
241 <212> TYPE: PRT

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242 <213> ORGANISM: Artificial Sequence  
244 <220> FEATURE:  
245 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14) - (G) -3-SDF-1(55-67)  
246 acid  
248 <220> FEATURE:  
249 <221> NAME/KEY: MISC\_FEATURE  
250 <222> LOCATION: (17)..(17)  
251 <223> OTHER INFORMATION: Gly in position 17 may be present or absent  
253 <400> SEQUENCE: 12  
254 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
255 1 5 10 15  
256 Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn  
257 20 25 30  
259 <210> SEQ ID NO: 13  
260 <211> LENGTH: 31  
261 <212> TYPE: PRT  
262 <213> ORGANISM: Artificial Sequence  
264 <220> FEATURE:  
265 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14) - (G) -4-SDF-1(55-67)  
266 acid, CTCE0013  
268 <220> FEATURE:  
269 <221> NAME/KEY: MISC\_FEATURE  
270 <222> LOCATION: (17)..(18)  
271 <223> OTHER INFORMATION: Gly in positions 17 and/or 18 may independently be  
272 present or absent  
274 <400> SEQUENCE: 13  
275 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
276 1 5 10 15  
277 Gly Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn  
278 20 25 30  
280 <210> SEQ ID NO: 14  
281 <211> LENGTH: 30  
282 <212> TYPE: PRT  
283 <213> ORGANISM: Artificial Sequence  
285 <220> FEATURE:  
286 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14) - (G) -3-SDF-1(55-67)  
287 amide  
289 <220> FEATURE:  
290 <221> NAME/KEY: MISC\_FEATURE  
291 <222> LOCATION: (17)..(17)  
292 <223> OTHER INFORMATION: Gly in position 17 may be present or absent  
294 <220> FEATURE:  
295 <221> NAME/KEY: MOD\_RES  
296 <222> LOCATION: (30)..(30)  
297 <223> OTHER INFORMATION: AMIDATION  
299 <400> SEQUENCE: 14  
300 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
301 1 5 10 15  
302 Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn

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FYI  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:8; Xaa Pos. 10  
Seq#:9; Xaa Pos. 9  
Seq#:10; Xaa Pos. 9  
Seq#:11; Xaa Pos. 8  
Seq#:31; Xaa Pos. 9  
Seq#:32; Xaa Pos. 8  
Seq#:35; Xaa Pos. 2,5  
Seq#:36; Xaa Pos. 2,5  
Seq#:39; Xaa Pos. 20  
Seq#:40; Xaa Pos. 20  
Seq#:41; Xaa Pos. 28  
Seq#:42; Xaa Pos. 28  
Seq#:43; Xaa Pos. 20  
Seq#:44; Xaa Pos. 20  
Seq#:45; Xaa Pos. 28  
Seq#:46; Xaa Pos. 28  
Seq#:50; Xaa Pos. 2,5  
Seq#:51; Xaa Pos. 2,5,14  
Seq#:52; Xaa Pos. 1  
Seq#:53; Xaa Pos. 2,5  
Seq#:54; Xaa Pos. 2,5,14  
Seq#:55; Xaa Pos. 1  
Seq#:58; Xaa Pos. 14  
Seq#:59; Xaa Pos. 1  
Seq#:61; Xaa Pos. 14  
Seq#:62; Xaa Pos. 1  
Seq#:64; Xaa Pos. 14  
Seq#:65; Xaa Pos. 1  
Seq#:68; Xaa Pos. 1  
Seq#:70; Xaa Pos. 14  
Seq#:71; Xaa Pos. 1  
Seq#:73; Xaa Pos. 14  
Seq#:74; Xaa Pos. 1  
Seq#:76; Xaa Pos. 14  
Seq#:77; Xaa Pos. 1  
Seq#:79; Xaa Pos. 14  
Seq#:80; Xaa Pos. 1  
Seq#:82; Xaa Pos. 14  
Seq#:83; Xaa Pos. 1  
Seq#:85; Xaa Pos. 14  
Seq#:86; Xaa Pos. 1  
Seq#:88; Xaa Pos. 14  
Seq#:89; Xaa Pos. 1  
Seq#:91; Xaa Pos. 14

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Seq#:92; Xaa Pos. 1  
Seq#:94; Xaa Pos. 14  
Seq#:95; Xaa Pos. 1  
Seq#:97; Xaa Pos. 14  
Seq#:98; Xaa Pos. 1  
Seq#:100; Xaa Pos. 14  
Seq#:101; Xaa Pos. 1

## VERIFICATION SUMMARY

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Input Set : A:\80421-1.APP

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L:176 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0  
L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0  
L:216 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
L:236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0  
L:746 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0  
L:767 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0  
L:773 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (33) SEQUENCE:  
L:778 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (34) SEQUENCE:  
L:824 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0  
L:873 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0  
L:966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:16  
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:16  
L:1035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:16  
L:1072 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:16  
L:1104 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:16  
L:1141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:16  
L:1173 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:16  
L:1210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:16  
L:1341 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0  
L:1382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0  
L:1413 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:0  
L:1460 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:0  
L:1501 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0  
L:1532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55 after pos.:0  
L:1605 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0  
L:1635 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0  
L:1689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0  
L:1719 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62 after pos.:0  
L:1763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:0  
L:1793 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0  
L:1882 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:68 after pos.:0  
L:1926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:70 after pos.:0  
L:1956 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:71 after pos.:0  
L:2010 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:0  
L:2040 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:74 after pos.:0  
L:2084 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:0  
L:2114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:77 after pos.:0  
L:2168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:79 after pos.:0  
L:2198 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:80 after pos.:0  
L:2242 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:82 after pos.:0  
L:2272 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:83 after pos.:0  
L:2326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:85 after pos.:0  
L:2356 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:86 after pos.:0  
L:2400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:88 after pos.:0  
L:2430 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:89 after pos.:0  
L:2484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:91 after pos.:0  
L:2514 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:92 after pos.:0  
L:2558 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:94 after pos.:0

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L:2588 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:95 after pos.:0

L:2642 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:97 after pos.:0

L:2672 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:98 after pos.:0

L:2716 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:100 after pos.:0